

PHYSALIS IN MEXICO, CENTRAL AMERICA AND THE WEST INDIES

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Continued from Vol. 69, No. 778

69. *Physalis foetens* Poiret, in Lamarck, Encyclopédie Méthodique. Botanique . . . Supplement 2:348. 1817. -

Annual, 10-65 cm tall, spreading-hairy with varying mixtures of short hairs and longer, multicellular ones, many terminating in glands; leaf blades ovate to ovate-lanceolate, coarsely and irregularly toothed, sometimes saliently, sometimes sinuately so; principal blades 2-10 cm long and 15-55 mm wide, on petioles 1-5 cm long; flowering calyx hairy, often densely so, 4-8 mm long and 2.5-6 mm wide at base of lobes, upper 2-4 mm divided into usually lanceolate lobes, attenuate or subulate tipped; flowering pedicels 2-6 mm long; corolla immaculate, or with slight, and not obvious spots, (8-) 10-15 mm long and 12-25 mm wide when fully expanded; anthers violet or bluish, 1.5-3 mm long, on slender, often blue, filaments 2-5 mm long; fruiting calyx 5-angled, basally cordate, hairy in varying amounts, (15-) 22-49 mm long and (13-) 18-40 mm wide, the upper 4-10 mm divided into attenuate or subulate-toothed lobes; fruiting pedicels 5-10 mm long, reflexed; berry nearly spheric, thin-walled, 10-15 mm in diameter.

P. foetens is nearest *P. subulata*, differing in its immaculate, or nearly immaculate, larger corollas, larger anthers, and its more abundant glandularity.

SELECTED COLLECTIONS: MEXICO: DISTRITO FEDERAL: Sierra de Ajusco, 8500 ft, Oct. 2, 1895, *Pringle 6219* (BR, F, GH, MEXP, NY, UC, US, VT); DURANGO: Durango, 1896, *Palmer 695* (US); GUANAJUATO: near Dolores Hidalgo, Aug. 10, 1947, *Kenoyer 1939* (GH); HIDALGO: near Tequixquiac, Aug. 30, 1903, *Rose & Painter 6644* (NY, US); JALISCO: 5 miles s of Ojuelos on road to Lagos de Moreno, July 19, 1955, *Weintraub & Roller 67* (MICH); MEXICO: cerca de Totolcingo, municipio de Acolman, July 18, 1965, *Rzedowski 20217* (MEXP); OAXACA: Oaxaca, Sept. 25, 1930, *Russell 220* (US); San Luis Tultitlanapa, near Oaxaca, July 1908, *Purpus 3582* (BM, F, GH, NY, UC, US); QUERETARO: silty flats with shrubs and cacti, Aug. 23, 1961, *Waterfall 16547* (F, MICH, OKLA, US); SAN LUIS POTOSI: in arenosis circa Morales, 1867, *Schaffner 701*, (GH); SINALOA: Rosario, Apr. 4, 1910, *Rose et al 14580* (US); VERACRUZ: Mt. Orizaba, Aug. 15, 1891, *Seaton 372* (F, NY, US).

Bourgeau 352 (BR, GH, P, US) Cacubaya, Vallée de Mexico, July, 1865-1866, is a collection that was in the Poiret Herbarium, accepted by him as *P. foetens*.

70. *Physalis subulata* Rydberg, Bull. Torr. Bot. Club **22**: 306. 1895.

Annual, 10-60 cm tall, spreading-hairy with varying mixtures of short and longer, multicellular trichomes, few or many terminating in glands; leaf blades ovate to broadly ovate, sometimes basally oblique, margins irregularly and coarsely dentate, sometimes sinuately so; principal leaf blades 3-7 cm long and 2.5-6 cm wide on petioles 1.5-3 (-5) cm long; flowering calyx hairy, 3-4.5 mm long, upper one-half to two-thirds divided into lanceolate, often subulate-tipped, lobes, on pedicels 1.5-3 (-5) mm long; corolla yellowish, maculate, 6-7 mm long and 5-11 mm wide when fully expanded; anthers violet or bluish, (0.3-) 1-1.5 (-2) mm long on filaments 2-3 mm long; fruiting calyx hairy, 5-angled, basally cordate, 2-3 cm long and 2-2.5 cm wide, the upper 6-10 mm divided into narrow teeth, usually subulate-tipped; fruiting peduncles 5-7 (-10) mm long, reflexed; berry nearly spheric 6-10 mm in diameter.

70a. var. *subulata*

Leaves usually coarsely and irregularly dentate to sinuate-dentate.

SPECIMENS EXAMINED. MEXICO: CHIHUAHUA: waste grounds, Guerrero, Sept. 8, 1887, *Pringle 1344* (Type: GH; Isotypes: F, NY, US, VT); DURANGO: Tejaman, Aug. 21-27, 1906, *Palmer 494* (F, GH, NY, US); Durango, Sept. 1896, *Palmer 634* (F, GH, NY, UC, US).

70b. var. *neomexicana* (Rydberg) Waterfall, comb. nov., *P. neomexicana* Rydb., Mem. Torr. Bot. Club **4**:325-326. 1895; *P. foetens* var. *neomexicana* (Rydb.) Waterfall, *Rhodora* **60**: 168. 1958.

This has the small maculate corollas of *P. subulata*, not the large, immaculate, or sometimes slightly maculate, corollas of *P. foetens*, the closest relative. The var. *neomexicana* also has leaves less deeply, and more regularly toothed than either var. *subulata*, or *P. foetens*.

COLLECTIONS EXAMINED. MEXICO: BAJA CALIFORNIA: Palm Valley, May 30, 1883, *Orcutt s.n.* (US).

71. *Physalis angustiloba* Waterfall, sp. nov.

Planta herbacea, ad 1 meter alta; trichomatibus mollibus, articulis, partim glanduliferis, ad 1 mm longis; foliis ovatis, cuspidatis, inaequaliter magnodentatis vel integerrimis, principalibus 4-11 cm longis et 2.5-10 cm latis, petiolis 2-7.5 cm longis; calycibus floriferis 3.5-6 mm longis et 3-5 mm latis ad basim loborum; calycis lobis 2-3.5 mm longis lanceolato-attenuatis vel angustioribus; pedicellis 2-5 mm longis; corollis luteis, maculatis, 9-15 mm longis et 13-15 mm latis;

antheris violaceis, 2-3 mm longis; calycibus fructiferis pentangulatis, 25-30 mm longis et 18-28 mm latis, vestitis; pedicellis fructiferis 3-5 (-15) mm longis; baccis 10-13 mm latis.

TYPE: *Rogers McVaugh 21141* (MICH) bushy annual 1 meter high, sandy soil in tropical deciduous forest, hills 2 miles n of La Cuesta, road to Talpa de Allende, JALISCO, Nov. 19, 1960, Isotype: (OKLA).

COLLECTIONS SEEN. MEXICO: AGUASCALIENTES: oak forest near summit, Sierra del Laurel, 10 miles se of Calvillo, *McVaugh 18439* (MICH, OKLA); GUERRERO: llano, San Antonio, Montes de Oca, Oct. 25, 1937, *Hinton 11541* (GH, MICH, NY); JALISCO: *McVaugh 21141* type, cited above.

Each of the 3 collections cited above present differences which tempt one to assign each to a different species. Perhaps future collections will clarify the situation.

72. *Physalis turbinatoides* Waterfall, sp. nov.

Planta herbacea; trichomatibus mollibus, articulatis, partim glanduliferis; foliis ovatis, cuspidatis, inaequaliter et magne paucidentatis, principalibus 5-9 cm longis et 3-6 cm latis; petiolis 3-6 cm longis; calycibus floriferis vestitis, 2.5-3 mm longis et 2-2.8 mm latis ad basim loborum; calycis lobis anguste lanceolatis, 1.5-2 mm longis, pedicellis 3-5 mm longis; corollis immaculatis vel pallido-immaculatis, 5-6 mm longis et 5-7 mm latis; antheris luteis, 1-1.5 mm longis, filamentis filiformibus, 1-2 mm longis; calycibus fructiferis plus minusve vestitis praesertim ad venis, 24-32 mm longis et 15-20 mm latis, lobis attenuatis, 6-10 mm longis; baccis 8-11 mm latis.

TYPE: *C. G. Pringle 7263* (VT) near Cuernavaca, 5000 ft, MORELOS, MEXICO Sept. 22, 1896; Isotype: (GH).

73. *Physalis turbinata* Medicus, in Acad. . . . Theod. - Palat. 4: 189-190, t. 5, fig. 2. 1780; *Alkekengi barbadense* . . . Dillenius, Johannes Jacobus, Hortus Elthamensis, 10, t.9, f.9. 1732; *Physalis barbadensis* Jacquin, Nickolaus Joseph, Miscellanea Austriaca Sive Plantarum Selectarum, 1781; *P. hirsuta* var. *barbadensis* (Jacq.) Dunal in D. C. Prod. 13(1): 446. 1852.

Annual, 15-100 cm tall, stems spreading-hairy, the trichomes jointed, often gland-tipped; leaf blades ovate, often attenuate-tipped, margins entire to irregularly, often sinuate-dentate, 1-15 teeth on each side; principal leaf blades 5-11 cm long and 4-8 cm wide, appressed, jointed hairs in varying abundance on both sides, sometimes restricted to the veins, sometimes some reduced to mere bases; petioles of principal leaves 2-7 cm long; flowering calyx (3-) 4-6 mm long, upper one-half to two-thirds divided into narrowly lanceolate lobes; flowering pedicels 4-6 mm long; corollas yellowish, maculate, hairy in the throat, 6-12 mm long and 7-15 mm wide; anthers bluish, 2-2.8 mm long on filaments 3-4 mm long; fruiting calyx 5-angled, cordate-

based, pubescent, 3-4 cm long and 2-3 cm wide, its lobes 5-10 mm long and usually somewhat attenuate; fruiting pedicels 5-15 mm long; berry nearly spheric, 9-13 mm in diameter, on a gynophore 1-2 mm long, the gynophore and lower inner surface of the fruiting calyx sometimes with gland-tipped hairs.

This species is similar to *P. pubescens*, and tends to merge with it in its extreme manifestations, but the flowers and fruiting calyces are larger, and the latter have longer, and usually narrower calyx lobes, in this characteristic resembling *P. cordata*, which, however, has glabrous fruiting calyces, *P. porrecta*, and some phases of *P. ignota*. The occasional presence of gland-tipped hairs inside the fruiting calyx near its base is also reminiscent of *P. ignota*.

Much material identified with the name *P. turbinata* in the past is here referred to *P. cordata* Miller. If the species-concepts of the two were identical, this course would be necessary due to the priority of the latter name. But the original concept of *P. turbinata* Medic. specifies a hairy plant, this actually being a proposed new name for *Alkekengi barbadense nanum*, *alliariefolia* Dillenius, Hort. Elth., the specific name being taken from part of the Dillenius description of the fruiting calyx, "ab initio angustiores, postea ampliores magis . . . angulosae, pentagone nempe . . . in mucronem longiorum productae . . . in quibus acini latent grandiusculi turbinati . . ."

It is to such material, which has usually passed as large *P. pubescens*, that the name *P. turbinata* is here applied.

SELECTED COLLECTIONS. MEXICO: COLIMA: Colima, Aug. 1897, Palmer 121 (MICH, UC, US); GUERRERO: second barranca east of Temisco, north of Río Balsas, Adama, Nov. 6, 1937, *Mexia* 8760 (F, GH, NY); JALISCO: wet banks near Guadalajara, Sept. 27, 1902, *Pringle* 11643½ (F, GH, US); MICHOACAN: pine forest on precipitous slopes 3 miles below lumber camp at Dos Aguas, Sept. 15, 1958, *McVaugh* 17865 (MICH); SINALOA: short tree forest, sand valley in foothills, Comedero, Jan. 27, 1940, *Gentry* 5391 (NY); YUCATAN: *Gaumer* 482 (MICH, UC, this number is *P. viscosa* var. *yucatanensis* at BM, F, GH, US). BRITISH HONDURAS: San Andres, Corozay, July 1933, *Lundell* 4932 (MICH). GUATEMALA: bank of river, Gulán, Jan. 17, 1905, *Deam* 387 (GH). HONDURAS: Amapala, Valle, Sept. 11, 1945, *Rodriguez* 3375 (F); between Juticalpa and airport, Mar. 14, 1949, *Standley* 18018 (F). PANAMA: near Madden Dam, Río Chagres,

Canala Zone, July 30, 1935, *Seibert 554* (GH, NY). COSTA RICA: Mar. 1900, *Pittier 16082* (GH, NY, US); CUBA: San Jose, Santa Clara, June 1941, *Howard 5170* (GH, NY). DOMINICAN REPUBLIC: bank of Maimon River, Piedra Blanca, La Vega, Jan. 18, 1946, *Allard 14748* (NY). HAITI: Marmelada, du Nord, Dec. 18, 1925, *Leonard 8110* (NY). PUERTO RICO: Rio Piedras, May 4, 1899, *Heller 1277* (NY). ST. VINCENT: near Palmyra, *Smith 1328a* (GH). TORTOLA, V.I.: April 1913, *Fishlock 5* (NY).

74. *Physalis pubescens* L., *Species Plantarum* 1:183, 1753; *P. villosa* Miller, *Gard. Dict.* ed 8, 1768; *P. obscura* Michx., var. *glabra* Michx. & var. *viscido-pubescens* Michx., *Flora Boreali-Americana* 1:149. 1803; *P. hirsuta* Dunal in D. C., *Prod.* 13(1): 445. 1852; *P. viscido-pubescens* (Michx.) Dunal, l.c.; *P. floridana* Rydberg in Small, *Flora of the Southeastern U. S.* 983. 1903; *P. pubescens* var. *minutifolia* O. E. Schulz in Urban, *Symbolae Antillanae* . . . 6:145. 1909; *P. pubescens* var. *glabra* (Michx.) Waterfall, *Rhodora* 60:165. 1958 (See discussion under *P. cordata*).

Annual, 8-90 cm tall, usually villous and sometimes viscid, varying to more or less glabrate; leaf blades ovate, often acuminate, bases sometimes inequilateral, margins usually irregularly several-toothed, sometimes entire or with 1-few teeth, surfaces varyingly soft-hairy with vestiture more abundant, and appressed, on the veins of the abaxial surface, sometimes nearly glabrous; principal blades usually 4-9 cm long and 2-4 cm wide on petioles 2-7 cm long; flowering calyx usually 4-10 mm long and 3-12 mm wide at base of lobes; upper 1-4 mm of calyx divided into ovate-deltoid to lanceolate lobes; flowering pedicels 3-6 mm long; corolla yellowish, dark-maculate, more or less matted-hairy in the throat below the maculations, 7-10 (-12) mm long and 10-15 mm wide; anthers bluish or violet, 1.5-3 mm long on filaments 2-3 mm long; fruiting calyx 5-angled, usually prominently so, usually soft-hairy, 18-30 mm long and 13-22 mm wide on pedicels 5-13 mm long; berry 10-18 mm in diameter, sessile or subsessile on the invaginated calyx-base.

Physalis pubescens var. *minutifolia* O. E. Schulz is here considered as an unusually small extreme of the species, rather than as a distinct variety. It would be interesting to check further to see if there could be a geographic population in the Barbados similar to the type of the proposed variety.

SELECTED COLLECTIONS. MEXICO: BAJA CALIFORNIA: San José del Cabo, Jan. 20, 1928, *Jones 24393* (F, GU); CHIAPAS: Cerro del Boqueron, Sept. 1913, *Purpus 6993* (NY, UC); CHIHUAHUA: southwestern Chihuahua, 1885, *Palmer 140* (GH, NY, US); JALISCO: Barranca of Guadalajara, Aug. 4, 1902, *Pringle 8630* (BM, F, GH, NY, UC, US, VT);

MICHOACAN: semi-desert scrub, 4 miles w of Apatzingan, Aug. 8, 1941, *Leavenworth 1381* (F); NAYARIT: moist tropical forests, precipitous mountainsides, 12 miles w of Tepic, Sept. 8, 1960, *McVaugh 18854* (MICH); Maria Madre Island, May 1897, *Nelson 4255* (F, GH, US); NUEVO LEON: wooded hillsides, 19 miles w of Linares, *McGregor et al 214* (KANU); OAXACA: Tomellin Canyon, Dec. 17, 1895, *Pringle 7004* (GH, MEXP, VT); PUEBLA: Cerro de Coatepe, Aug. 1907, *Purpus 2711* (UC); SINALOA: Culiacan, Oct. 20, 1904, *Brandeggee s.n.* (UC); San Blas, Mar. 24, 1910, *Rose et al 13382* (NY, US); thickets, Villa Union, Apr. 2, 1910, *Rose et al 13885* (NY, US); SONORA: creek w of Pilares de Nacozari, Nov. 19, 1939, *Drouet et al 3678* (F); TAMAULIPAS: Victoria, 1907, *Palmer 53* (F, UC, US); TEPIC: ravine, Acaponeta, Apr. 9, 1910, *Rose et al 14231* (GH, NY, US); VERACRUZ: Remudadero, March 1923, *Purpus 9001* (F, GH, NY, UC, US); YUCATAN: *Gaumer 23514* Kancabconot, Jan. 1917 (F, GH, NY, US). BRITISH HONDURAS: river bank, Stann Creek District, Jan. 27, 1937, *Gentle 1918* (GH, MICH, NY, US). COSTA RICA: La Lola, Limon, Oct. 21, 1953, *Heiser 3654* (F); wet meadow, San Jose, *Standley 41220* (US). EL SALVADOR: San Salvador, Dec. 20, 1921, *Standley 19552* (GH, NY, US). GUATEMALA: Quiriga, Izabal, May 15, 1922, *Standley 24074* (GH, NY, US); Río Ixcán, Huehuetenango, July 23, 1942, *Steyermark 49330* (F, US). HONDURAS: banana field, La Fragua, Atlantida, Dec. 7, 1927, *Standley 52657* (F, US). NICARAGUA: El Recreo, Zelaya, Apr. 23, 1949, *Standley 19110* (F). PANAMA: San Jose Island, Jan. 10, 1946, *I. M. Johnston 1105* (GH, US); Gorgana Beach, Aug. 7, 1938, *Woodson et al 1694* (GH, NY). BAHAMAS: New Providence, Apr. 7, 1904, *Britton 123* (NY). CUBA: Sierra de Cabra, Pinar del Rio, Mar. 6, 1911, *Britton et al 9811* (NY); San Pedro, Isle of Pines, Feb. 15, 1916, *Britton et al 14334* (NY); Sierra Maestra prope Daiquiri, Oriente, Oct. 28, 1916, *Ekman 8075* (NY). DOMINICAN REPUBLIC: Sierra de Ocoa, Ciudad Trujillo (Santo Domingo), Feb. 28, 1929, *Ekman 11709* (NY—as var. *minutifolia*). HAITI: St. Michel de l'Atalaye, Nov. 20, 1925 (GH, NY). JAMAICA: New Market, Sept. 13, 1907, *Britton 1602* (NY). PUERTO RICO: sand dunes, Catano, Feb. 14, 1914, *Britton & Cowell 1552* (NY). TOBAGO: Charlotteville, Jan. 20, 1953, *Hunnewell 19986* (GH). TORTOLA, V.I.: *Fishlock 285* (GH).

75. *Physalis leptophylla* Robinson & Greenman, Proc. Amer. Acad. Arts & Sci. 29: 389-390. 1894.

Annual, 0.5-1 meter tall; vestiture of soft, somewhat tangled, multicellular hairs of different lengths up to 1 or 1.3 mm long, some with elongate, terminal glands; leaf blades thin, ovate, acuminate, principal ones 4-8 cm long and 2.5-6 cm wide, on petioles 2-8 cm long; margins of blades entire, or rarely with a few irregular, shallow teeth; surfaces of blades glabrous, or nearly so, but margins more or less

ciliate, bases somewhat inequilateral; flowering calyx 2-3 mm long and 2-4 mm wide at base of the ovate-deltoid lobes formed from the upper 1-1.5 mm of the calyx, pedicels 1-2 (-3) mm long; corolla light yellow or cream-colored, with brown or purplish maculations, glabrous, or nearly so, within, 5-9 mm long and 6-10 mm wide; anthers violet to purplish, ovate to oblong, 0.8-1.5 mm long, on filaments 2-3 mm long; fruiting calyx thin, 5-angled, but seldom prominently so, 12-20 mm long and 10-15 mm wide, on pedicels 3-5 mm long; berry 4-8 mm long, sessile to subsessile on a calyx invaginated 1-1.5 mm.

SELECTED COLLECTIONS. MEXICO: BAJA CALIFORNIA: near spring, north side of Cerro de la Giganta, Distrito del Sur, Nov. 28, 1947, *Carter et al*, 2073 (UC, US); CHIHUAHUA: canyon, Guasaremos, Rio Mayo, Aug. 25, 1936, *Gentry* 2442 (F, GH); COLIMA: steep hills, 14 miles wnw of Santiago in ravines, Nov. 7, 1960, *McVaugh* 20782 (MICH, OKLA); DURANGO: shady canyon bottom, 10 miles w of Tamaula, Dec. 18, 1939, *Gentry* 5270 (GH, NY); GUERRERO: Cutzamala, Coyuca, Sept. 26, 1936, *Hinton* 8493 (US); JALISCO: along stream in steep moist ravines, 9 miles n of road junction at w end of Bahia de Navidad, Dec. 12, 1959, *McVaugh & Koelz* 1730 (MICH, OKLA); Barranca of Tepic, Oct. 11, 1893, *Pringle* 5455 (GH, US, VT); MEXICO: Bejucos, Temascaltepec, Nov. 13, 1933, *Hinton* 5204 (US); SINALOA: under shrubs, 64 miles s of Culiacan, *Breedlove* 1549 (US); SONORA: moist shady soil under trees or shrubs, Alamos, Oct. 28, 1939, *Gentry* 4771 (F, MICH, NY, OKLA, UC, US). GUATEMALA: brushy rocky slope between Zacapa and Chiquimula, Oct. 9, 1940, *Standley* 7381 (F).

In its extremes, *P. leptophylla* tends to merge with *P. pubescens*.

76. *P. hylophila* Standley, Journ. Wash. Acad. Sci. 14: 243. 1924.

Annual, 30-90 cm tall, stems soft-hairy with jointed whitish, more or less viscid trichomes, the longer ones 1-2 mm long, often tipped with pinkish or light brown glands, sometimes intermixed with shorter hairs which also may be glandular-capitate; leaf blades ovate, often acuminate, margins entire or with a few, irregularly sinuate teeth; young blades with varying amounts of hair similar to that of the stems but often appressed on the veins, more or less glabrate; principal blades 2.5-4 cm long and 2-2.5 cm wide, but all specimens examined have lost lower, possibly larger, leaves; petioles 1-2.5 cm long; flowering calyx 3-5.5 mm long and 3-5 cm long; corolla yellowish, apparently immaculate or with spots not strongly contrasting, tube glabrous within; corolla 6-7 mm long and 7-8 mm wide when fully expanded; anthers yellowish, light greenish-yellow or bluish tinged, 1.1-1.3 mm long, on filaments 3-4 mm long; fruiting calyx 5-angled, but not strongly so, and with intermediate ribs, hairy, 14-16 mm long and 10-12 mm wide on pedicels 3-5 mm long.

Physalis hylophila is similar to *P. leptophylla* in its small anthers, corolla tube essentially glabrous internally, and in having hairs often gland-tipped. They differ in *P. leptophylla* having contrastingly maculate corollas, smaller flowering calyces, lighter colored anthers, and a smaller, less obviously 5-angled fruiting calyx.

COLLECTIONS EXAMINED. MEXICO: SONORA: under large trees on lower slope of mountain w of Alamos, Dec. 12, 1939, *Drouet & Richards 3971* (F). EL SALVADOR: wooded slope along lake, Laguna de Maquigue, La Union, Feb. 18, 1922, *Standley 20971* (Type: US; Isotypes: GH, NY). PANAMA: El Real, Darien, Oct. 7, 1938, *Allen 956* (F, GH, NY, US).

77. *Physalis vestita* Waterfall, sp. nov.

Planta herbacea, multicaulis e radice lignose elongata; caulibus 15-65 cm longis, lanatis, probabiliter adscendentibus vel decumbentibus, interdum ad basim fruticosis; foliis ovatis, dense canis lanosove-titis, integerrimis vel inaequaliter paucidentatis vel undulatis, principalibus 25-40 mm longis et 15-28 mm latis, petiolis dense vestitis, 10-35 mm longis; calycibus floriferis dense vestitis, 3-4 mm longis et 4-5 mm latis; calycis lobis deltoideis, 1 mm longis; pedicellis floriferis 4-6 mm longis; corollis pallidoluteis, maculatis, tubis intus vestitis, 7-10 mm longis et 10-13 mm latis; antheris coeruleis vel violaceis, 3-4 mm longis; filamentis filiformibus, 2.5-4 mm longis; calycibus fructiferis pentangulatis, dense vestitis, 15-22 mm longis et 13-18 mm latis; pedicellis fructiferis 7-13 mm longis; baccis 8-10 mm latis.

TYPE: *J. N. Rose 13766* (US) vicinity of Mazatlan, Mar. 3, 1910, Sinaloa; Isotypes: (F, GH, NY).

COLLECTIONS SEEN. MEXICO: SINALOA: Mazatlan, Nov. 20, 1926, *Jones 22515* (F); cliff facing the ocean, Signal Hill, Mazatlan, Sept. 16, 1925, *Mexia 32* (UC); *Rose 13766*, Type, cited above.

78. *Physalis clarionensis* Waterfall, sp. nov.

Planta herbacea; ramis 15-45 cm longis, glabris; foliis ovatis, acuminatis, inaequaliter crasse dentatis, principalibus 2-5 cm longis et 15-25 mm latis, petiolis 10-22 mm longis; calycibus floriferis glabris, 3.5-4 mm longis et 2-4 mm latis ad basim loborum; calycis lobis deltoideo-lanceolatis, 2 mm longis; pedicellis floriferis 4-5 mm longis; corollis pallido-luteis, obscure maculatis, jugulis glabris, 5-6 mm longis et 8-9 mm latis; antheris coeruleis vel violaceis, 1.5 mm longis; filamentis filiformibus, 2-3 mm longis; calycibus fructiferis pentangulatis, glabris, 23-27 mm longis et 16-18 mm latis; calycis lobis ovatis, mucronatis, 4-6 mm longis, pedicellis fructiferis 5-10 mm longis; baccis 10 mm latis.

TYPE: A. W. Anthony 411 (UC), Clarion Island, off the coast of Lower California, March-June, 1897; Isotypes: (F, GH, US).

Physalis clarionensis resembles some phases of *P. angulata*, but has prominently 5-angled fruiting calyces in contrast to the 10-ribbed ones of the latter species, and has maculate corollas, smaller than usual for *P. angulata*, as well as small anthers. Except for its relatively small corollas and anthers and 5-angled fruiting calyces, it might seem referable to *P. philadelphica* (*P. ixocarpa*).

The specific name refers to the Clarion Islands, the type locality.

79. *Physalis minuta* Griggs, *Torreyia* 3: 138-139. 1903.

Herbaceous, annual, stems 15-35 cm tall; vestiture of very short, appressed, antrorsely curled hairs; leaf blades ovate to lanceolate-ovate, principal ones 10-25 cm long and 6-12 mm wide on petioles 7-20 (-50) mm long; flowering calyx 2-3 mm long, divided one-fourth or one-fifth into attenuate lobes; corolla 4-5 mm long, immaculated or with slightly contrasting spots; anthers 1.3-2 mm long, yellowish or bluish tinged; fruiting calyx 5-angled, 15-18 (-20) mm long and 12-15 mm wide on filiform pedicels 4-10 mm long; berry 7-8 mm in diameter, sessile, or nearly so, on the invaginated calyx-base, which is minutely and sparsely capitate-hairy.

Griggs, in describing this species, emphasized the alleged minute size of the corolla, basing the specific name on it. Speaking of them he said "... they would hardly be noticed except on careful search or by accident . . . corolla very small, about 2 mm in diameter when fully expanded . . ."

On a sheet of the type collection (US) there is one opened corolla, irregularly flattened and pressed out on only one side, measuring 2.5 mm from its center to the margin of the one pressed lobe, therefore, 5 mm in diameter. On a duplicate sheet (GH) there are two pressed corollas, well-flattened; one is ca. 4 mm long and the other is ca. 5 mm long.

Griggs must have been overly impressed by the minute undeveloped flower buds. In *Physalis* old plants reflowering under unfavorable conditions may produce small flower buds which either fall unopened, or, sometimes, produce small undeveloped flowers. This is another characteristic complicating the taxonomy of the genus.

In any event, this species is *not* characterized by extremely small flowers, although it is in the small-flowered series, so this emendation to the description is necessary to permit future identification of the species, and to prevent its being redescribed in the future on the basis of young, vigorous plants with well-developed flowers.

It might also be noted that the type collection is of material from which the larger leaves have fallen.

COLLECTIONS EXAMINED. MEXICO: COLIMA: along road between El Ciruelo and Cuyutlan, Manzanillo, Mar. 11, 1943, *Gilly et al 11* (MICH); GUERRERO: Acapulco, Oct. 1894 to March 1895, *Palmer 304* (Type: US; Isotype: GH); Acapulco, *Thiebaut 1101* (P). COSTA RICA: Braxilito Bay, July 2, 1932, *Howell 10205* (GH, US); Murcielago Bay, July 2, 1932, *Howell 10211* (F); la base de Salises, July 1890, *Pittier 2634* (BR, US); sand beach, 5 km east of Puntarenas, Aug. 24, 1958, *Sauer, 2336* (WIS). HONDURAS: vicinity of El Zomorano, Morazan, July 21, 1949, *Standley 21520* (F). NICARAGUA: shady places, Asseradores Islands, Jan. 15, 1903, *Baker 147* (GH, MICH, NY, UC, US); sandy field, sea level, Corinto, Chinandega, July 19, 1947, *Standley 11555* (F).

80. *Physalis carnos*a Standley & Steyermark, Field Mus. Publ. Bot. 23: 19. 1943.

Herbaceous, much-branched, prostrate or decumbent, stems 15-20 cm long; vestiture of very short, antrorsely curled, appressed hairs; leaf blades succulent, ovate to rhombic-ovate, principal ones 15-25 mm long, on petioles 5-12 mm long, nearly glabrous, or with a few hairs similar to the stem-hairs; flowering calyx 2-2.5 mm long, upper one-third or one-fourth divided into narrowly triangular to ovate-triangular lobes; flowering pedicels ca. 2 mm long; corolla 3-4 mm long, immaculate (but possibly faded); anthers 0.8-1.2 mm long, bluish-green, on filiform filaments ca. 1.5 mm long; fruiting calyx 5-angled, 10-13 mm long and 7-9 mm wide on pedicels 4-5 mm long; berry ca. 6 mm in diameter.

TYPE: *Julian A. Steyermark 37766*, sand dunes, alt. 1-2 meters, Ocos, San Marcos, GUATEMALA, Mar. 15, 1940. (F).

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